

Clinical Trial Protocol

Iranian Registry of Clinical Trials

29 May 2026

Effects of Resistance Exercise Training on IL-6, TNF- α , hsCRP, GH, IGF-1, Estrogen, Adiponectin, Resistin, Insulin resistance and Balance in Postmenopausal Women with Knee Osteoarthritis

Protocol summary

Summary

Introduction: The aims of this study is to investigate the Effects of Resistance Exercise Training on IL-6, TNF- α , hsCRP, GH, IGF-1, Estrogen, Adiponectin, Resistin, Insulin resistance and Balance in Postmenopausal Women with Knee Osteoarthritis. **Methodology:** The statistical population of this study consists of women with knee osteoarthritis selects purposefully and randomly will be divided in control (n=10) and resistance exercise training (n=11) groups. The subjects will be performed resistance exercise training 8 to 12 times with an intensity of 60 – 80% of one of their maximum repetition for a period of 12 weeks, three sessions a week (45 minutes each). Correlated t-test will use for determining within group differences and independent t-test for determining between groups differences, respectively. Data will be analyzed at less than 0.05.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016061428406N2**

Registration date: **2016-07-04, 1395/04/14**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2016-07-04, 1395/04/14

Registrant information

Name

Akbar Azamian Jazi

Name of organization / entity

Shahrekord University of Medical Sciences

Country

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Recruitment status

Recruitment complete

Funding source

Shahrekord University

Expected recruitment start date

2013-03-20, 1391/12/30

Expected recruitment end date

2014-03-20, 1392/12/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of Resistance Exercise Training on IL-6, TNF- α , hsCRP, GH, IGF-1, Estrogen, Adiponectin, Resistin, Insulin resistance and Balance in Postmenopausal Women with Knee Osteoarthritis

Public title

Effects of Resistance Exercise Training on Postmenopausal Women with Knee Osteoarthritis

Purpose

Other

Inclusion/Exclusion criteria

Inclusion criteria: knee arthritis; pain on > 50 % of days in the month in one or both knees; difficulty with activities of daily living due to knee pain; X-ray documenting knee OA within 1 year prior to study entry; 15 lbs to 50 lbs overweight. Exclusion criteria: significant cardiac, pulmonary, renal, or hepatic disease; major

psychiatric diseases; ACR functional class IV; structured exercise more than once per week for 20 minutes or longer during the 3 months prior to study entry; anticipates moving from the area within 18 months of study entry; anticipates undergoing knee surgery within 1 year of study entry; weight loss of more than 5 kg (11 lbs) in 3 months prior to study entry; anorexiant or other medications known to affect metabolism; current or planned pregnancy.

Age

From **50 years** old to **70 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **21**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Shahrekord University

Street address

Shahrekord University, kilometr 2 Jadeh Saman,
Shahrekord, Iran

City

Shahrekord

Postal code

Approval date

2013-09-16, 1392/06/25

Ethics committee reference number

190/746

Health conditions studied

1

Description of health condition studied

Knee Osteoarthritis

ICD-10 code

M17

ICD-10 code description

Arthrosis of knee

Primary outcomes

1

Description

TNF- α

Timepoint

Before and after 12 weeks of resistance exercise training

Method of measurement

Elisa Kit

2

Description

IL-6

Timepoint

Before and after 12 weeks of resistance exercise training

Method of measurement

Elisa Kit

3

Description

Resistin

Timepoint

Before and after 12 weeks of resistance exercise training

Method of measurement

Elisa Kit

4

Description

hsCRP

Timepoint

Before and after 12 weeks of resistance exercise training

Method of measurement

Elisa Kit

5

Description

Adiponectin

Timepoint

Before and after 12 weeks of resistance exercise training

Method of measurement

Elisa Kit

6

Description

Insulin Resistance

Timepoint

Before and after 12 weeks of resistance exercise training

Method of measurement

Elisa Kit

7

Description

GH

Timepoint

Before and after 12 weeks of resistance exercise training

Method of measurement

Elisa Kit

8**Description**

IGF-1

Timepoint

Before and after 12 weeks of resistance exercise training

Method of measurement

Elisa Kit

9**Description**

Estrogen

Timepoint

Before and after 12 weeks of resistance exercise training

Method of measurement

Elisa Kit

10**Description**

Balance

Timepoint

Before and after 12 weeks of resistance exercise training

Method of measurement

Standard test for balance

Secondary outcomes

empty

Intervention groups**1****Description**

Experimental group: The subjects performed resistance exercise training 8 to 12 times with an intensity of 60 – 80% of one of their maximum repetition for a period of 12 weeks, three sessions a week.

Category

Lifestyle

2**Description**

Control group: The control group received no exercise intervention.

Category

N/A

Recruitment centers**1****Recruitment center**

Name of recruitment center

Shariati and Alzahra Hospital

Full name of responsible person**Street address****City**

Isfahan

Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Shahrekord University

Full name of responsible person

Mohammad Faramarzi

Street address

Vice President of Research, Shahrekord University, kilometr 2 jadeh Saman, Shahrekord, Iran

City

Shahrekord

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Shahrekord University

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin**Type of organization providing the funding**

empty

Person responsible for general inquiries**Contact****Name of organization / entity**

Shahrekord University

Full name of responsible person

Akbar Azamian Jazi

Position

PHD, Academic Staff (Associate Professor)

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Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty

Person responsible for updating data

Contact

Name of organization / entity

Shahrekord University

Full name of responsible person

Akbar Azamian Jazi